Functional Specification

Certification Application

Monday, May 17, 2004

Version 0.1

Revision & Sign-off Sheet

Change Record

Date	Author	Version	Change Reference

Reviewers

Name	Version Approved	Position	Date

Table of Contents

Project Vision/Scope Summary

By September 30, 2004, a new Web based Teacher Certification Application will be operational at the Arizona Department of Education. The new application will be based on proven Microsoft ASP.NET technology and will be able to meet the needs of the State of Arizona. The system will be maintainable, flexible, and user friendly to both internal department employees as well as external users such as teachers, school district personnel and institutional users.

The solution is envisioned to address multiple problems including:

- Difficulty in navigation within the application.

- The lack of automated validation of requirements in the issuance of Educator certifications.

- Having to enter duplicate data in the application as the certification progresses through the certification workflow.

In addition, the application will provide new capabilities such as access over the World Wide Web while at the same time acting as data source for meeting NCLB requirements.

The full Vision/Scope document is available on the ADE Certification Unit project portal located at http://devsd1:8081/Certification

Project History

With over 200,000 teachers being tracked in the existing teacher certification application, there is a significant burden placed on the department to simply manage and communicate certification status to the educational community.   The Web based Teacher Certification application will help alleviate this burden by allowing teachers to begin the application process as well as track the current status of their Certification.

Prior attempts at delivering a solution have met with problems with usability problems and user satisfaction issues. In addition to these issues, the current PowerBuilder based application will not work over the World Wide Web. The stated goal is that the application is to be online in Bata form by September 30, 2004. Delays in securing project funding may lead to changes in the implementation schedule.

The Vision/Scope document has been reviewed and signed off on by the Certification and IT units. Requirements for the application are listed in the Vision/Scope document.

Functional Specification Executive Summary

The Educator Certification Application will make use of both custom development as well as use powerful out of the box electronic commerce functionality available in Microsoft Commerce Server and reporting capability built into Microsoft SQL Reporting services. This specification describes the individual components and how the workflow application functions. In addition preliminary screen layouts show the business users sample screens of what the application as they move through the certification process. The processing of the application begins with a customer requesting a certification online or at the department's customer desk. The process includes screening, payment and evaluation of the Educators credentials and finally ends in the issuance or denial of an Educators certificate.

The workflow incorporates the usage scenarios from the External user through the different roles and typically completes with the evaluator. The usage scenarios for these roles have been incorporated into the normal workflow described later in this document.

In addition to workflow, this document describes the logical organization of the application into modules. This organization is intended to make the development and maintenance easier over the life of the application and to provide consistency in the applications structure. These modules are aligned with the functional areas of the application. In addition to functional modules, support modules are included for the performance of generic tasks such as security, administration, auditing, credit card processing.

The requirements for the application have been brought forward from the Vision/Scope document as an appendix and as use cases.

Design Goals

In addition to meeting the specific requirements, there are several design goals for the application. Certificates and their requirements are not set in stone. Over time they will change and the application must allow the department to make changes to certificates and their requirements without having to re-deploy the application.

Business Requirements Summary

The ultimate goal of a new teacher certification application will address the usability problems identified by the user community as well as provide improved access and accuracy in the reporting and monitoring of teacher certifications for other initiatives such as No Child Left Behind (NCLB). Users have shown dissatisfaction with the existing application in these three main areas:

- Difficulty in navigating throughout the application.

- The lack of automated validation of requirements in the issuance of Educator certifications.

- Having to enter duplicate data in the application as the certification progresses through the certification workflow.

In addition to the user difficulties, new requirements related to the application across the World Wide Web make a Windows forms based application impractical to use, maintain and deploy. This will lead to new workload on the system and reduce workload on ADE staff. Assuming that existing workload will not exceed the current workload being performed, the system will not have to approximately 60,000 services per year. With the application now being online, availability must be generally increased to 24 hours a day.

Also of importance is that they system will be able to provide useful data for various purposes. The system must allow for querying to answer questions on adequacy of personnel, numbers, quality, certification and content knowledge.

It must allow the department to determine which teachers holding emergency certificates are making progress towards certification. System must address data gaps related to answering questions of an adequate supply of personnel.

System must provide accurate data to – SEAP, local agencies, teacher prep programs, ADE departments and teachers.

Users must be able to register themselves on the site and apply for a certification without having to contact the department beforehand.

Certification renewals are the majority of the services performed by the certification unit. Application renewals require that the districts certify that the educator has completed a specific number of professional development hours. While not required to meet the requirements for the Federal Grant, if renewal applications are accepted online, there must exist functionality to notify an authorized contact at the district that they must submit the hours for the applicant. The district will then perform

submission of the hours via a secure web page(s) across the internet. It is preferred that these pages be linked through the existing SDER application.

User Requirements Summary

The users will all access the application through a WEB browser. Internal users are expected to use at least Internet Explorer 6.0 and the latest service pack.

External users may use either Internet Explorer 5.5 with at least Service Pack 2 or Netscape Communicator 6.2 or above.

Users access to the system will be role based – that is they must belong to a specific role in order to have access to a functional area of the application.

The following roles are defined for the application:

Educator - The Educator will have the ability to submit an application for Certification. The educator will also be able to review the current certifications held and summary information such as the expiration of the current certifications.

Screener – Do we need the screener to be a separate role?

Evaluator - Only members of the Supervisors or Evaluators roles will have access to the evaluations area. This is where evaluations of individual educators will take place and certificates will be issued.

Investigator – Investigations verifies that applicants do not have a criminal history and denies applications that do not qualify for a certificate due to criminal background.

System Administrator – System administrators will have administrative control of the application and access all functional areas.

Phone Operator- Phone operators verify application status and provide information over the phone. They have limited abilities to edit the personal information of an applicant.

Supervisor-Supervisors are users that have the ability to override some built in system rules.

System Requirements Summary

System requirements are relatively simple for this application. Systems requirements are listed in the following table.

Server	Qty	Application
IIS Applications Server/SQL Reporting servers	2	Dual Processor Pentium IV 2.4Ghz, 2GB RAM 2 x 40GB Disk RAID 1

SQL Server (Min Configuration the Department currently has a SQL cluster available for hosting the data)	2	Dual Processor Pentium IV 2.4Ghz, 2GB RAM 2 x 40GB Disk RAID 1 2 x 120GB Disk RAID 1 Servers should be configured in a SQL cluster to support high availability.

Required Interoperability

Application Interoperability will be limited to the SDER and the Certification search applications. These applications will only be modified to use the new database format for displaying the same information they display today.

Inherent interoperability

Specific interoperability will also be inherent in the application due to data feeds coming from external sources.

External data sources include:

- Fingerprint data that is imported on a nightly basis from the State Department of Public Safety.

- Test data is imported from a disk supplied by N.E.S.

Because reports will be able based on Microsoft SQL Reporting, there are additional interoperability opportunities available "out of the box" that will not require additional work. For example, standard reports will be able to be exported to Microsoft Office formats as well as Image and PDF format.

Operations Requirements Summary

Currently the certification application is only needed during normal business hours. If functionality is extended to the end users, the available hours of the application will at a minimum need to be increased and possibly be extended to 24x7.

With the application going online, there are new security requirements:

- All external communications must be secured over SSL.

- External users such as Teachers must not have access to the internal portion of the application.

- The servers that run the applications must be locked down and patched.

The current number of internal users performing certification is approximately 18 users. The numbers of external users is unknown at the time of this document. Because there is no history of external use, we are assuming about one half - or 30,000 transactions will be initiated in the system per year from on line services. The system must be able to

support the current teachers in the state so the profile database must be able to support 200,000 profiles and be able to grow as is needed.

Usage Scenarios/Use Case Studies Summary

Usage scenarios define the sequences of activities the users perform within the proposed solutions environment. This information is comprised of a set of key events that will occur within the users' environment. These events are described by their objectives, key activities, sequences, and the expected results.

External user - Teacher/Educator

- Applicant will either register as new user or log-in to the system.
- The application will collect the same user information collected by the existing power builder application.
- User will log-in using SSN and password.
- User will select type of service being requested.
- User will then be walked through supplying information for each service requested. The information collected will be specific to the service requested.
- Users will be presented a total for all the services they are requesting and be prompted for payment information.
- The user will supply credit card payment information that will be validated by the system.
- The user will be presented with the steps and instructions required to complete each service request. For example - If transcripts are required, the user will be told to send transcripts to the department. The user will be prompted for identifying information so that the screener can identify transcripts as they arrive. If for example transcripts are coming from multiple sources the external user must say input in text that "Transcripts are coming from 2 sources – XX University and YY University". The user will also receive an e-mail listing the steps required to complete the applications for services. When the transcripts arrive the service will be screened. When all materials are received, the system will e-mail the user that to complete the service that they must return to the site and submit payment. Upon receiving payment, the system will change the status of the application as ready for evaluation. The evaluators will then evaluate the applicant as usual.
- While the department is waiting for additional information from the applicant, the user's application will be flagged as pending additional information. If no information is received after a specific period of time the system should allow printing/viewing an aging report identifying applications that require manual review.
- Payment must be received within 60 days or the application will be purged. Purging the information will be logged under the users account.

Investigations

Investigations should be able to lock the file and prevent any certificates from being issued. Investigations will be able to input disciplinary information and be able to permanently prevent the department from issuing certifications by marking the applicant as having "no services". This may be removed at a later time by investigations. Investigations will notify the applicant they were denied and close the application. An application should have a status indicating it is under investigation.

When an application goes into investigation, the investigations group will maintain ownership of the application for as long as required to clear the applicant.

The application should have two queries regarding fingerprints available to the Investigative Unit. The queries should include: 1) individuals that have applied for a certification service (within an optional time frame) and have failed to apply for a fingerprint clearance card. 2) Individuals with current work records and invalid fingerprint clearance cards. There should be an option to disaggregate these queries by school district.

The application must provide failsafe mechanisms regarding certain individuals. These mechanisms should prohibit any employee from accidentally issuing a certificate to individuals that are currently under investigation or to individuals that have had prior disciplinary action taken against his/her teaching credentials. There should be an "unlocking" mechanism that is available to members of the Investigative Unit so that certificates can still be issued when appropriate.

The website should incorporate work history information on each certified individual.

Investigations Comments – The application should incorporate an investigations comment page similar to the one currently in existence. This should be available only to members of the Investigative Unit. Comments made in the current PowerBuilder application should be migrated over to the new system.

External usage and data related to Investigations
NASDTEC – The application must be able to incorporate monthly downloads from NASDTEC. These downloads provide updates on teachers that have been revoked/suspended in other states and territories.

Fingerprints – The application must be able to incorporate nightly downloads from the Department of Public Safety regarding updates on Fingerprint Clearance Cards ("FCC's"). Certified teachers' FCC information should be displayed. All other FCC's should be saved in the "background" (this includes FCC's issued for all education purposes). The data coming from DPS should be treated as the master source of fingerprint data. The system should have the

ability to store to applicants fingerprint application number. When the user goes to view fingerprint data, the system should display the fingerprint data based on a SSN match and application number match.

"Certification Search"– The application should be linked to the "certification search" website. The website should pull the following information from the application and make it available to authorized users via the internet: name, social security number, certificates, endorsements, approved areas, record of prior disciplinary action, FCC status, certification comments (no fingerprint or investigation comments). This application uses ADE common logon to manage permissions.

SDER –This is the existing SDER application. The SDER application must be updated to link to the new certification database. Work is expected to be minimal. This application uses ADE common logon to manage permissions.

Screeners

Case 1

User searches to see if the applicant is already in the system. System will allow user to search for existing applicants and verify if the applicant has existing certifications. All certification information will be available to the screener.

Validate new application is complete, and requirements are met (for quick services)

Validate re-submitted applications (on quick services)

Create file

Perform quick services

Validate & Receipt correct fees

Generate letter of deficiencies – *(no transcripts/transcripts not official, incorrect fee, application not complete, service requested not accurate)*

> Route application to:

- investigations (yes to crime question)

or

- evaluator *(new & non-quick services only)*

Return incomplete files with letter of deficiencies

Case 2

Perform services - *such as name & address changes, issue and mail Substitute and Emergency Substitute Certificates.*

Evaluators

Case 1

Case 1a

- Evaluate transcripts
- Verify test scores
- Validate specific certificate requirements have been met
- Validate letters of experience

Case 1b

- Perform revaluations of existing applications

Input evaluation data

Change receipt services

Upon the evaluation they may:

- Disqualify a certificate
- Generate letter of deficiencies– *(no transcripts/transcripts not official, incorrect fee, application not complete, service requested not accurate)*

or

- Issue certificates

School/District

School districts have the limited ability to read some of the educator information. This includes:

- Validate finger print card
- View comments related to the certification
- View types of certificate the educator holds

Phone Operator

- Phone operators have the limited ability to update personal information and supply information to the caller.
- First the operator identifies the caller using social security number; and checks the status of file (received, issued, fingerprints)
- They may then update the file, change addresses and emails, verify testing information and receipt of transcripts.

Feature Cuts and Unsupported Scenarios

The following desired features will not be included in this release of the application but are listed here for follow up projects.

- Web services functionality for the automatic receipt of transcripts. This will require collaboration with the State Universities.

- The certification renewal process may be cut from the initial release if it is determined that it will prevent deployment of an on-line application by September 30th.

The following features may be delayed until a later date if time/resource constraints dictate.

- "Optix" Image display integration – this may be delayed until a later phase.

- Integrated credit card processing in the internal application. Charges at the front desk would be handled manually using credit card devices. Internet charges would be manually keyed in.

Assumptions and Dependencies

Assumptions

- Requirements as gathered in the Vision/Scope are complete or nearly complete.

- Upon reviewing the Federal grant that funded this application, it was noticed that requirements for external users were to be collected through focus groups. These requirements were regarding identifying special education teachers that were teaching in areas they were not certified and how to identify and track these teachers. At the time of this document, these meetings have not taken place. It is assumed that no additional requirements will be generated from the external users. If new requirements arise, they will result in a change of scope.

- Servers are readily available and comply with project requirements.

- Representative user profile information will be made available at the beginning of the engagement.

- If the customer provides personnel to participate in the development and testing of the application, these personnel will be available to work on the project on a full time basis. The customer understands that customer personnel diverted from working the project may delay delivery of the solution beyond the scheduled delivery date.

- Customer personnel will be available to address any business-issues that arise during development.

- All required software licenses (Microsoft's or any third party's) are available for use.

- Expertise in integrating the scanned images application is available.

- ADE personnel will manage all hardware and hardware delivery.

- Workspace, network connections, user accounts, and dialup or VPN access will be available for team members.

- If credit card payment is required, merchant bank accounts and a payment testing environment will be made ready by the customer at least 2 weeks prior to internal release #1.

- Changes to external applications such as SDER and Certification search which are ADE common logon applications will be made by ADE employees familiar with these applications.

Constraints

- While the application must be ready for production by September 30, 2004. However changes of scope or issues outside of the control of the project are acknowledged as risks that can impact the delivery of the application into production.

- Additional developers, web artists, and designers can be subcontracted but must be requested and approved by the ADE at least two (2) weeks in advance to their participation.

Solution Design

Certification Process Flow

The following diagram below outlines the certification process flow for the "Teacher Certification" solution.
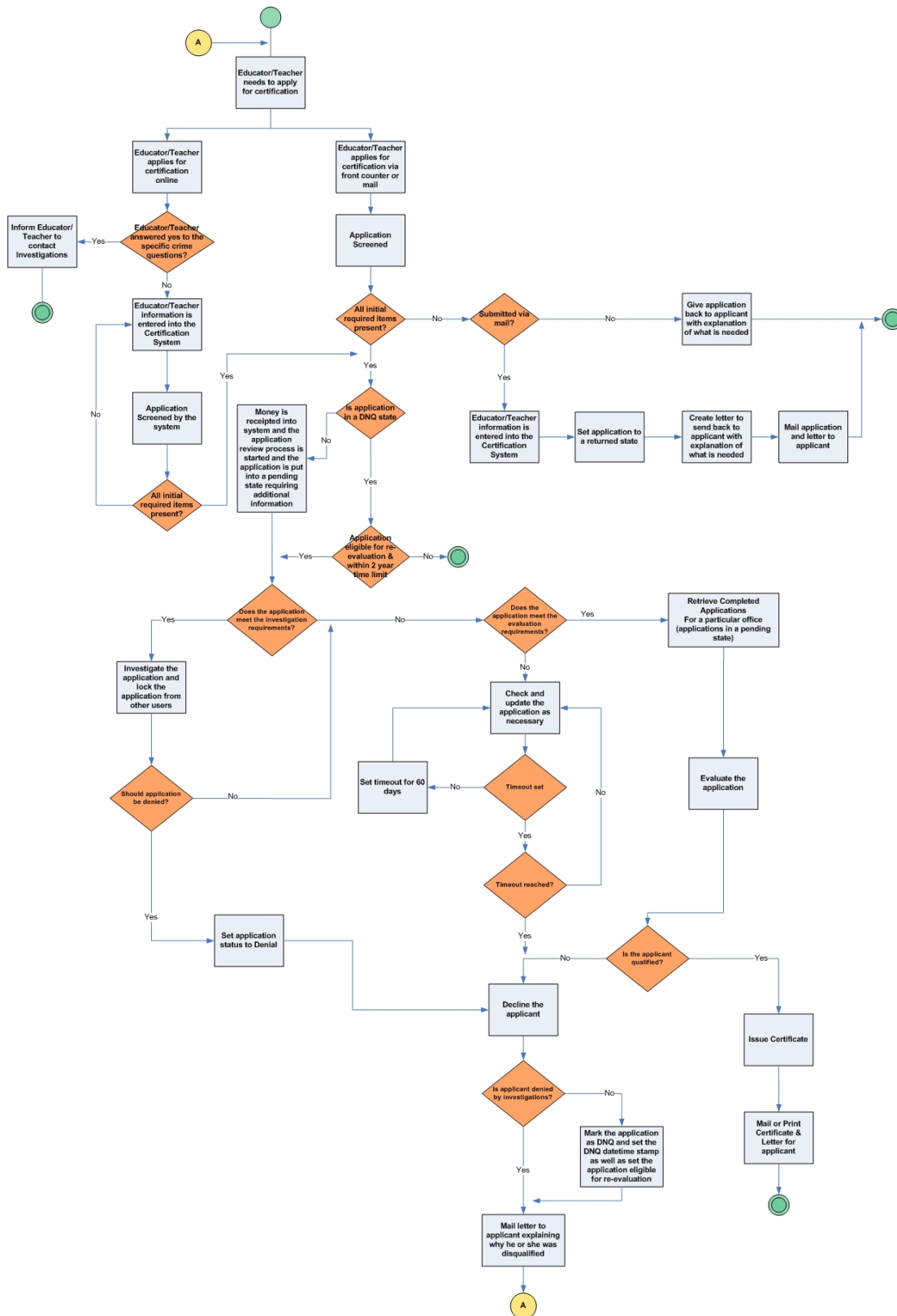
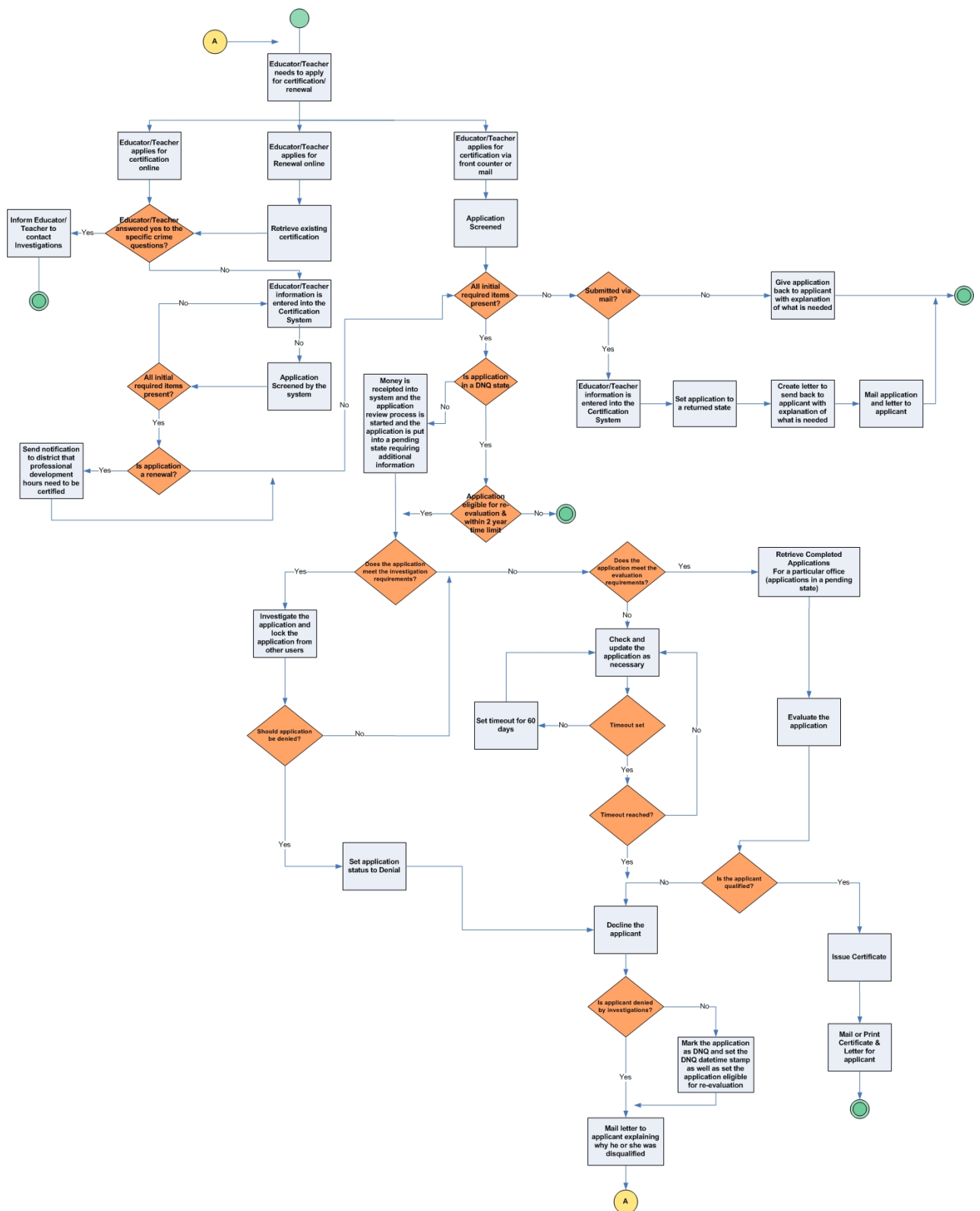**Figure 1 - Certification Process Flow**

Figure 2 - Certification Process Flow with Renewals

Solution Design

Conceptual Design Summary

The solution will rely heavily on Microsoft products and technologies that are available today. We have selected Microsoft technologies since they provide us with the necessary development tools, infrastructure, and backend products that are based on open standards to deliver a solution that will help the Arizona Department of Education meet the requirements outlined earlier in the document. The following diagram illustrates the different components that make up the "Teacher Certification" application.
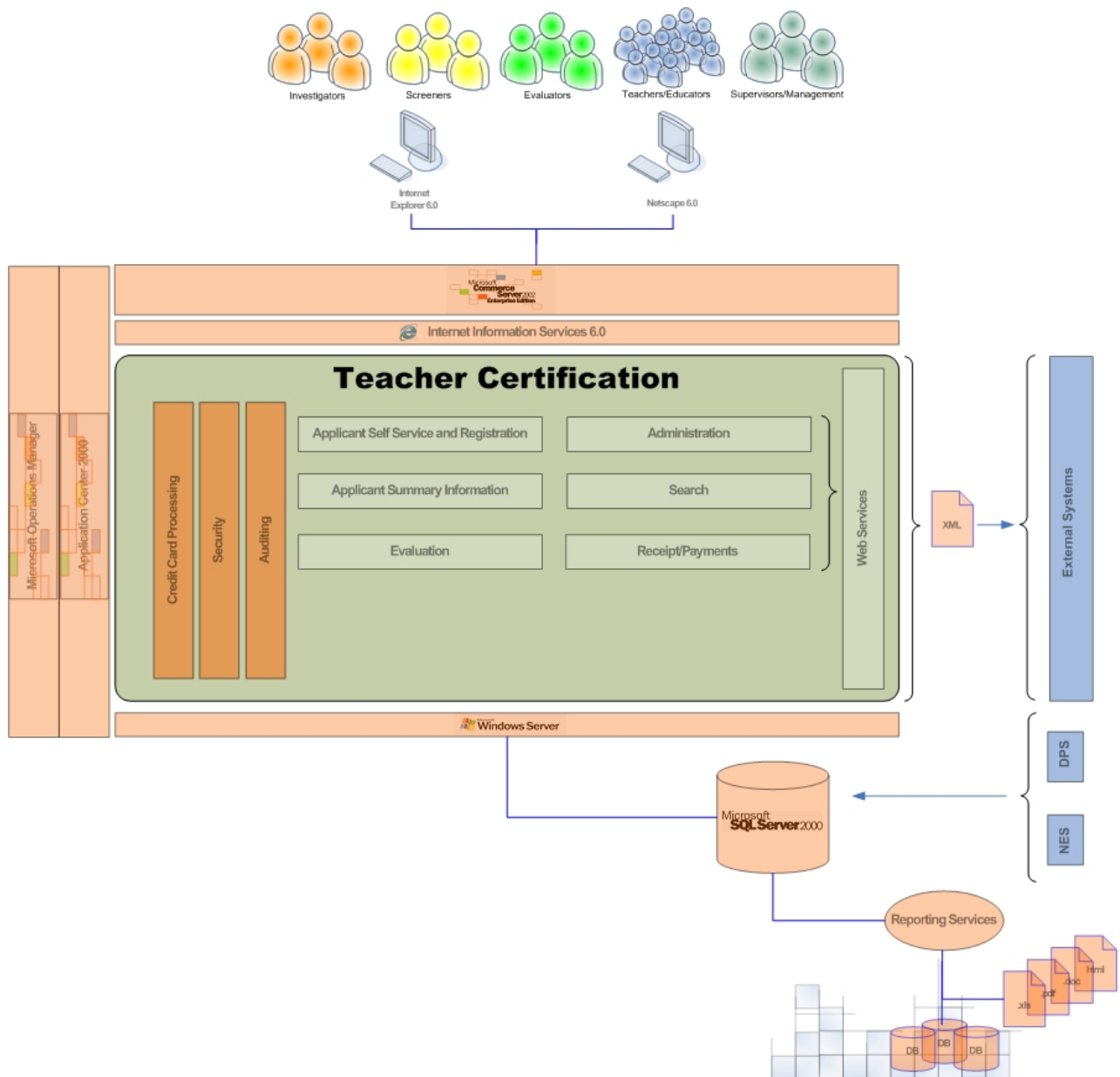
As indicated in the figure above, the new solution is a single integrated application that is based on a modular design. This allows the Department of Education to take advantage of having development teams focusing on specific pieces of functionality or areas within the application. The Department of Education is then able to distribute its development resources as necessary and provide a concentrated development effort to the solution.
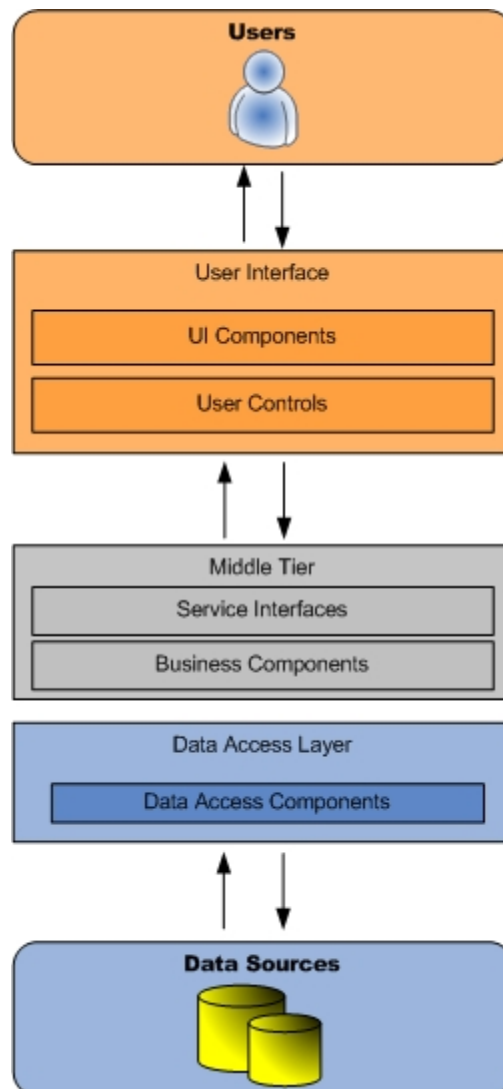
High Level Architecture Interaction

Figure 4 – Architecture Interaction

The "Teacher Certification" application is providing a web based interface for the users to interact with the solution. The solution will implement the interface using ASP.NET and utilizing Microsoft Commerce Server for the online certification request. Most solutions provide a way for a user to interact with the application and follow a predictable process. To help orchestrate these user interactions, it can be useful to drive the process using separate user process components. In the "Teacher Certification" application this will be accomplished using ASP.NET user controls. This way the process flow and state management logic is not hard-coded in the user interface

elements themselves, and the same basic user interaction "engine" can be reused by multiple user interfaces. As the data is collected through the user interface there needs to be a way to act upon the data. The actions are typically implemented through business rules or business tasks. These business rules or tasks will be implemented through business components. The business components are self contained pieces of code that handle the processing of the business rules or tasks. The business components are then consumed by the user interface to present the necessary logic to the end user. Most of the business components will need to access a data store at some point during a business process. In order to provide a layer of abstraction for the business components it is necessary to build a separate data access layer. By creating another abstract layer we are able to centralize all data access functionality which makes it easier to maintain and configure.

Security

The primary purpose of the security system is to build a security infrastructure that allows the administrator of the "Teacher Certification" application the flexibility of defining how a user can interact with the application. As indicated in the figure above the "Teacher Certification" application will contain a separate security layer that determines whether a user is able to access a particular area of the application. The security module will be an extension of the existing security infrastructure built by the Department of Education. The security module will rely on the ADE Enterprise application which is the existing "single sign on" service to determine the level of access the user has to the application. In order to interact with ADE Enterprise the security module will utilize the ADESecurityWrapper DLL which is the managed code wrapper around the ADESecurity COM+ components. Administration of security will also be handled by the ADE Enterprise application.

Security for the external portion of the "Teacher Certification" solution (Applicant Self Service and Registration) will be handled by the built in profile and security mechanisms within Commerce Server. The solution will specifically utilize a custom authentication scheme that will allow the Department of Education to create an authentication mechanism that doesn't rely on NT authentication but utilizes the information captured through the profile system to authenticate users. This reduces the effort needed to administer login information for the Teachers/Educators. The Applicant Self Service and Registration site will store the user's security credentials within Commerce Server in an encrypted format for the security credentials that are deemed to be sensitive information.

Auditing/Logging

As events are happening in the system there needs to be a way to capture what is happening and who is causing the action to happen. In order to facilitate this in the system there is a separate auditing module that will be utilized by the business components to inform the system of who is performing a certain action and what action took place. This provides a separation of the audit events and system logging from any of the business components. All actions deemed system level will be logged as well as any security logging. Any system exception logging will be handled by the existing SAIS exception block already built by the Department of Education. Microsoft Operations Manager will then be utilized to aggregate the information into a central reporting structure for operation staff. The operations staff is then able to define any alerts based on the information collected through Operations Manager. Operations Manager is then able to act upon any of the alerts through an automated response such as send email notifications, run a script, etc.

Applicant Self Service and Registration

The "Applicant Self Service and Registration" module is one of two external facing portions of the application. It utilizes a large portion of Commerce Server to create profiles and perform online payment processing for services rendered by the Department of Education. Profiles are essential

to the "Teacher Certification" solution because they provide information about the user that is then used to perform the necessary tasks to complete the user's certification application. The "Applicant Self Service and Registration" module is comprised of a group of ASP.NET web pages and user controls that utilize the Commerce Server Base Class Library (BCL). The BCL provides access to runtime Commerce Server functionality such as profiles, order processing and is designed to be the foundation on which Commerce Server .NET-based applications are built. The BCL fully leverages the .NET Framework which allows the BCL to be used in conjunction with out-of-box ASP.NET Web Server Controls, third-party controls and any common business components that have been built for the solution.

Credit Card Processing

In order for a Teacher/Educator to complete the certification he or she will be required to pay for the services that he or she is requesting. This will be accomplished by utilizing a 3rd party credit card processing component that will utilize the Microsoft Commerce Server Pipeline for processing the order request. The credit card processing component will validate that the credit card information supplied is correct and that the credit card is authorized to be charged the amount necessary for the services rendered by the Department of Education. Since Commerce Server is the main engine to handle the payment collection for applications the Credit Card Processing module will also feed payment information into the "Teacher Certification" application's receipting and payment tables prior to the completion of the Commerce Server Pipeline processing.

Applicant Summary Information

The "Applicant Summary Information" module is a group of ASP.NET web pages and user controls that provide screeners and evaluators the ability to view information about an applicant. All of the applicant's certification information is viewed through this module. The "Applicant Summary Information" also provides the evaluator or screener the ability to generate a letter of deficiencies, route applications to investigations or to an evaluator. The module also allows the evaluator or screener the ability to perform certain service type functions such as name & address changes, issue substitute certificates, etc. The module will adhere to the same architecture mentioned in the "High Level Architecture Interaction" section above.

Evaluation

The "Evaluation" module is comprised of a group of ASP.NET web pages and user controls that provide the evaluator the ability to change receipt services, issue certificates, input evaluation information, etc.

Receipt/Payments

The "Receipt/Payments" module is a group of ASP.NET web pages and user controls that provide a means for the screener to enter payment information so that a charge can be posted to account and payment can be posted as well. The module will also provide the screener the ability to refund any monies if there is a discrepancy on the account. The module will leverage the 3rd party component for any credit card processing.

Search

The "Search" module provides a centralized mechanism for searching information within the application. The "Search" module is comprised of a group of business components that are utilized by the user interface to submit a search and display results. The module provides a mechanism to centralize all search functionality into a single centralized location instead of having it mixed throughout all of the business components. The "Search" module allows for search on things such as an applicant's name, social security number, etc. The "Search" module also

provides support for retrieving names based on sound vs. spelling of the name. This is accomplished by utilizing the built in Soundex support within Microsoft SQL Server 2000.

Administration

As the Department of Education starts to interact with other agencies there needs to be a mechanism for outside individuals to access certain information and perform certain functions that falls outside of the Department's day to day activities. However, the Department of Education still needs to full fill its day to day operations and perform certain administration functions as well. In order to accomplish this administration of the "Teacher Certification" application will have internal administration functions as well as external administration functions.

Internal Administration

The internal administration functions provide a centralized area that allows the administrator to view information about what activities are taking place within the application, maintenance, and reporting. Administrators are able to view receipting reports as well as system activity reports around login, payment entry, certification changes, application creation, modification, deletion, and certificate printing. Application administrators will also use the administration module to perform data maintenance for lookup information that is contained within the application. One of the main uses for the administration module will be to define what a certification looks like to the end user. This definition contains information on what elements need to be on the certification as well as what type those elements are, such as, text box, dropdown, etc.

External Administration

The external administration functions provide the department with a mechanism to allow districts the ability to certify professional development hours for a particular Educator/Teacher. Once a district has been notified by the system that a Educator/Teacher has requested them to certify the professional development hours that were provided on the applicants renewal application they are able to electronically sign that the Educator/Teacher has completed the hours specified in the application. Districts are able to only see the Educators/Teachers that are tied to that district and are only able to access the external administration functions of the "Teacher Certification" application. The logon access for the district will utilize the existing accounts that have already been created in the SDER application.

Reporting

There are a significant number of reports that need to be generated for users. In order to have an integrated environment for the developers to build the reports we have decided to utilize SQL Reporting Services. SQL reporting services provides a comprehensive, server-based solution that enables the creation, management, and delivery of both paper type reports as well as web based reports. SQL reporting services supports a wide range of data sources as well as multiple output formats for the reports. This will allow the Department of Education to have a single integrated data and reporting infrastructure.

General reports will be handled by the reporting services web infrastructure for displaying and accessing the reports that are developed. Certification Certificates will be generated through the reporting services web service to allow greater control of who can generate a certificate as well as provide a printer friendly certificate page within the "Certification" application. The certificates will be generated in PDF format and downloaded to the client for printing. This will allow Department of Education staff members the ability to print certificates when they are away from the Department's office.

Security Strategy Summary

Because internal users will already be authenticated by their local Windows logon , the internal Certification application will rely on that for authenticating users as well. The actual user authorization will be performed by leveraging the existing ADE security infrastructure to determine what the specific permissions are for a user. This will require that the users Windows account be linked with the users ADE security account. This functionality is currently supported by the ADE security infrastructure.

Certification security will be role based with permission sets associated with each role. The existing ADE security components currently make use of a COM+ component developed in VB6 for all security authentication and authorization checks. In a recent security review some security vulnerabilities were discovered in the VB component that poses a potential risk to use the component in the certification application. If the threats are addressed then the component may be used by the Certification application by using the component directly. If the vulnerabilities are not addressed, it is relatively straightforward to bypass the COM+ component and develop a native .NET security component that implements the required functionality and uses the ADE security database.

Assign the Roles to the Authenticating User

Because Certification users are internal Microsoft Windows users, they do not have any ADE roles associated with them by default. Thus, we must attach the roles of the authenticating user to that user's identity so that you can implement the role-based security inside the Certification code.

This sample code shows how to assign roles to the authenticating user. The Certification application will implement its own method to retrieve the roles for that authenticated user and attach those roles to the authenticating user's identity, which is illustrated in the sample code to follow.

Modifying the global.asax.cs file as in the sample below will load the roles for a user

```
protected void Application_AuthenticateRequest(Object sender, EventArgs e)

{

    if (HttpContext.Current.User != null)

    {

            System.Web.Security.WindowsIdentity id;

            id =
            (System.Security.Principal.WindowsIdentity)HttpContext.Current.User.Identity;

            //Retrieve the Roles from ADE security

            ADE_Roles ADERoles;

            ADERoles = GetRoles(HttpContext.Current.User.Identity);

            String[] myRoles = new String[ADERoles.Count];

            Int i = 0;

            foreach( ADERole Role in ADERoles )

            {

                    myRoles[i++] = Role.ToString();
```

```
            }
                HttpContext.Current.User = new SecurityPrincipal(id,myRoles);


        }
}
```

Then when a page is loaded it can check security as in the following example

```
SecurityPrincipal myPrincipal= (GenericPrincipal)User;
foreach( string str in myPrincipal.m_roles )
{
    // Do something with the persons roles like enable tabs etc.
}
```

The VB code for accessing the ADE security database is contained on the Certification Portal in a Compiled HTML help file named ADE_Security.htm. The Portal address is http://devsd1:8081/Certification

Maintenance of role membership will be via the existing Enterprise tool used for managing security permissions in ADE security.

Deployment

The Certification application is designed for ease of deployment. Microsoft recommends using the existing Application Center software, upgraded to service pack 2, be used for application deployment.

- The Microsoft Application Blocks will be recompiled and strongly named. Once installed, these can be replicated across the farm by Application center.

- The initial installation of the ASP.NET pages will be via an MSI installer on the main server of the NLB web farm. Application center will be used to replicate the webs across the server farm.

- Functional Components will be initially deployed using and MSI file to the controller on the application server farm. Application Center will be used to deploy the components to the remaining members of the farm.

- SQL Scripts for any change in the database will be version controlled and labeled with each version and deployment of the application. Visual Studio.NET has the ability to integrate the scripting of the database with Version Control software(VSS)

Supportability Summary

The certification application will leverage the functionality in Microsoft Operations Manager to assist in support of the application. Information, Warnings and Errors will be written to the Certification Event log. The certification application should register its own event source on the web server so that events are maintained separate from other applications.

When MOM detects an error, it can be configured to send an alert to the help desk or to Network Services to notify them of a critical error.

User Interface Requirements

The Certifications unit has provided feedback and guidance as to how the user interface should work as well as look to the Evaluators and other users of the application. The following section describes the functionality of some of the user interfaces for the internal certification application.

Educator

The Educator tab provides a summary view of all the information for a particular Teacher/Educator. The view is broken down into different sub views to group the information into a more manageable view for the user. The following views are presented to the user and are further defined in the sections below.

- General

- Education

- Fingerprint

- Evaluations/Certificates

- Receipts

Find Educators

Description

The Find Educators screen provides a means for the user to search the system to see if a Teacher/Educator exists.

| Home | Evaluations | Reports | Administration | Educators |

Educators

Educators

Search By: [Last Name ▼]   [   ]

[Search]

Detail	Name	SSN	Unique Teacher ID
▤✏	Joe User	123-12-1234	1234567890
▤✏	Joe User1	123-12-1234	1234567890
▤✏	Joe User2	123-12-1234	1234567890
▤✏	Joe User3	123-12-1234	1234567890
▤✏	Joe User4	123-12-1234	1234567890
▤✏	Joe User5	123-12-1234	1234567890
▤✏	Joe User6	123-12-1234	1234567890
▤✏	Joe User7	123-12-1234	1234567890
▤✏	Joe User8	123-12-1234	1234567890

Find Educator

Add Educator

Functionality:

- The user is able to search for an educator by last name, first name, social security number, unique teacher id.

- The user is able to select a search criterion to search on and then enter the text to search. To initiate a search the user clicks on the "search" button.

- The search results are displayed in a grid for the user. The name, social security number, and unique teacher id are displayed for the user to determine the Teacher/Educator to select.

- The user is able to view the detailed information about a user by clicking on the detail icon on the row to view.

- The user is required to select a search criterion and enter text to search on before a search is performed.

Security:

- Any authenticated user is able to perform a search

General

Description

The general tab contains all of the general information about a Teacher/Educator. General information consists of things like first name, last name, date of birth, etc.

Functionality:

- The user is able to enter the following information for an Educator/Teacher

    o First Name

    o Middle Name

    o Last Name

    o Social Security Number

    o Date of Birth

    o Ethnicity

    o Gender

    o Home Phone

    o Address

    o City

    o State

    o Zip

- o Country

- o Comments

- o Email

- o National Board Certified

- o Troops for Teachers

- o Highly Qualified

- The user is required to enter all of the information contained within the "Required Information" section.

- The user can optionally enter the information in the "Optional Information".

- The user can save the information by clicking on the "save" button.

- The user can add a comment by clicking on the "add comment" button. The user is then presented with a form to enter comment information. The user is able to save the comment information by clicking on the "save comment" button.

- The user can clear any information entered by clicking on the "cancel" button. The Educator/Teacher is reloaded after the information is cleared.

- If information exists for a Teacher/Educator the information is displayed to the user.

Security:

- Any authenticated user is able to view and enter general information about a Teacher/Educator.

Education

Description

The Education tab provides information about the type of education the Teacher/Educator has obtained as well as whether he or she has participated in a teacher prep program.

Detail	Degree	Major/Program	School	State	Year	Teacher Prep	Out of Country
						☑	☐
✎	BS	Computer Science	Arizona State University	AZ	1987	☐	☐

General **Education** **Fingerprint** **Evaluations/Certificates** **Receipts**

Education Information

Detail Information

Degree: MS
School: Northern Arizona University
State: AZ
Teacher Prep: ☑

Major: Education
Year: 1990
Country: USA
Type of Program: Secondary Education

[Delete]   [Cancel]   [Save]

Functionality:

- The user is able to enter the following education information for a Teacher/Educator

    o Degree

    o School

    o Major

    o State the School resides in

    o Country where the school resides in

    o Whether the user has participated in a teacher prep program and the type of program

- If there is currently educational information for the selected Teacher/Educator the information is listed in the grid. The degree, Major/Teacher Prep program name, school, state, year and an indicator whether the school or program was out of the United States as well as whether the Teacher/Educator has participated in a Teacher Prep program.

- The user is able to look at the detailed information by clicking on the detail icon for the particular row in the grid.

- The user is able to modify information for a Teacher/Educator by clicking on the detail icon and changing any of the information in the "Detail Information" section. The selected row is highlighted to indicate that it has been selected.

- The user is able to update the information by clicking on the "save" button.

- The user can cancel their changes by clicking on the "cancel" button. The user's changes are cleared and the detailed information is reloaded.

- The user is able to enter new educational information by making sure an item is not selected in the grid and enter the information contained in the "Detail Information" section and clicking on the "save" button.

Security:

- Any authenticated user is able to view, update and add educational information for a Teacher/Educator

Fingerprint

Description

The Fingerprint provides a means for the user to capture fingerprint information for a Teacher/Educator that is supplied by the Department of Public Safety (DPS) as well as any disciplinary action that might have been taken against the Teacher/Educator.

| General | Education | Fingerprint | Evaluations/Certificates | Receipts |

Fingerprint Information

SSN:	111223333	Completed Date:	8/20/2000
Card Number:	2AB1234567	Application Date:	6/1/2000
Class:	Class 1	Date DPS received:	5/30/2000
Status:	Valid	Appeal Issue Date:	
Application Number:	0000311321	Last Updated:	9/6/2000

☑ Override

Override Date: 4/20/04

Override By: Joe User

[Cancel] [Save]

Disciplinary Action

Detail	State	Date	Comment
✎	AZ	4/20/04	Some Comment.................................
✎	CA	5/2/01	Some Comment.................................
✎	MA	1/3/88	

State: [▾]   Date: [   ]

Comment:

Enter Text
Enter More Text

[Cancel] [Save]

Functionality:

- The DPS fingerprint information is displayed to the user based on the information that was supplied by the DPS data feed.

- The User is only able to enter a Card Number and/or Application number. All other fields are read only.

- If a user makes a modification to the Card Number or Application number the information

is marked as overridden and the date and user that made the modification are recorded.

- The user can save any modifications to the finger print data by clicking the "Save" button.

- The user is able to clear their changes by clicking the cancel button. The initial data is reloaded again.

- Any existing disciplinary actions are displayed for the chosen Teacher/Educator in a grid. The state where the action took place, the date of the action and comments are displayed for the user to see in the grid.

- The user is able to modify the disciplinary action by clicking on the detail image next to the record that is to be modified. The selected row is highlighted to indicate that the row has been selected. The user is able to save the modified information by clicking the "save" button.

- The user is able to enter a disciplinary action for a user by specifying the state, date and any comments.

- The user can save the disciplinary action information by clicking the "save" button.

- The user can clear any information they have entered by clicking the cancel button.

Security:

- The Teacher/Educator information is available for everyone to see.

- The Teacher/Educator disciplinary information can only be modified by someone within the investigations group or by an administrator.

- Only users within the investigations group or administrators group are able to add disciplinary information.

- Any authenticated user is able to modify and add finger print information.

Evaluations/Certificates

Description

The Evaluations/Certificates tab contains all of the information for a Teacher/Educator's certificates. It also provides the user the ability to perform evaluations for a teaching certificate, endorsement or approved area.

Certifications

Description

The Certifications tab displays all of the certificate information for a Teacher/Educator.

| General | Education | Fingerprint | Evaluations/Certificates | Receipts |

Certifications   Evaluations

Certificate	Date Issued	Date Expires	Deficiencies
Provisional Secondary Endorsement 1 Endorsement 2 Area 1 Area 2	4/21/04	4/21/10	AZ, US, FP, Phonics, PK, SK
Provisional Elementary	4/22/04	4/22/06	
Some other certificate	4/22/04	4/22/06	

Print Certificate

Functionality:

- The selected Teacher/Educator's certificates are displayed in a grid for the user. The Certificate Name, Date Issued, Expiration Date, and Deficiencies are displayed.

- The most recent certificates are list first based on expiration date.

- The user is able to view an approved area by clicking on the name of the approved area that they would like to view. The user is then taken to the evaluation detail view of the approved area.

- The user is able to view an endorsement by clicking on the name of the endorsement that they would like to view. The user is then taken to the evaluation detail view of the endorsement.

- The user is able to view the evaluation for the certificate by clicking on the name of

the certificate. The user is then taken to the evaluation tab with the evaluation form for the certificate loaded for the user to view.

- The user can print a certificate by clicking on the "Print Certificate" button. Certificates, areas, and endorsements that have been marked as out of date will not be printed.

Security:

- Any authenticated user is able to view, modify, and add certification information.

Evaluations

Description

The Evaluations tab provides the user the ability to view a list of evaluations that have been performed for the selected Teacher/Educator.

| General | Education | Fingerprint | Evaluations/Certificates | Receipts |

| Certifications | Evaluations |

		Service	Date	Status
📝	✖	Provisional Secondary	4/21/04	Issued
📝	✖	Approved Area	4/22/04	DNQ
📝	✖	Endorsement	5/15/04	Issued

Functionality:

- The selected Teacher/Educator's evaluations are displayed in a grid for the user. The Evaluation Name, Date Performed, and Status are displayed.

- The user can view the evaluation form by clicking on the detail icon on the row for the evaluation that was performed.

- The user can delete an evaluation by clicking on the delete icon on the row to delete.

Security:

- Any authenticated user is able to view, delete evaluation information.

Evaluations (Detail View)

Description

The Evaluations also provides a detailed view of the evaluation so a user is able to fill out or modify the evaluation information for a particular service (Endorsement, Certificate, Approved Area) that is being performed or was performed.

| General | Education | Fingerprint | Evaluations/Certificates | Receipts |

Evaluation

All requirements listed below must be met . "No" indicates requirements that must be met . If you do not qualify, your are entitled to a one -time free re -evaluation. Each additional evaluation will incur a $30.00 charge . Once the full endoresement is issued , it is automatically renewed with the teaching certificate .

Applicant Name: [   ]   SSN: [   ]

NO ⌄   A valid Arizona elementary , secondary , special education , or vocational certificate.

NO ⌄   Three semester hours of ESL courses toward the full endorsement . (Second language learning experience courses are not applicable   . See R7-2-612.I.3 for complete list)

          Course No. [   ]

NO ⌄

          Three semester hours of ESL methods

          Course No. [   ]

Current requirements for the Full English as a Second Language Endorsement

NO ⌄   Some more text

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.
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.
.
.
.
```

[Save]

Functionality:

- The evaluation form is loaded based on the certificate, approved area or evaluation

the user selected.

- If the evaluation exists then the information that was entered by the user will be displayed.

- The user is able to save the information in the evaluation form by clicking on the "Save" button.

Security:

- Any authenticated user is able to view and save evaluation information.

Receipts

Description

The Receipts tab provides a means for the user to enter payment information as well as start a new service request for the Teacher/Educator.

| General | Education | Fingerprint | Evaluations/Certificates | Receipts |

Balance

Name:	Joe User	Address:	1 Main St, Phoenix AZ 85021
Teacher ID:	111223333	Balance:	$150.00

Transaction History

Date	Reference	Description	Office	Amount
4/23/01	CERT123445	Provisional Secondary	Phoenix	$60.00
4/23/01	CERT123445	Endorsement	Phoenix	$30.00
4/23/01	CK #2345	Check	Phoenix	$(90.00)

| Add Service | Add Payment |

Initial Receipt Screen

| General | Education | Fingerprint | Evaluations/Certificates | Receipts |

Balance

| Name: | Joe User | Birth Date: | 8/26/72 |
| SSN: | 111223333 | Balance: | $150.00 |

Payment Information

Date:	4/26/04	Office:	
Payment Type:	Credit Card	Amount:	
Card Number:		Card Holder:	

Cancel   Clear   Save

Add payment information

| General | Education | Fingerprint | Evaluations/Certificates | Receipts |

Balance

Name:	Joe User	Address:	1 Main St, Phoenix AZ 85021
Teacher ID:	111223333	Balance:	$150.00

Transaction History

Date	Reference	Description	Office	Amount
4/23/01	CERT123445	Provisional Secondary	Phoenix	$60.00
4/23/01	CERT123445	Endorsement	Phoenix	$30.00
4/23/01	CK #2345	Check	Phoenix	$(90.00)

New Service

Provisional Elementary   Amount $60.00

[Add]   [Cancel]   [Done]

Add Service

Functionality:

- The selected Teacher/Educator's Name, Social Security Number, Birth Date and current balance are displayed for the user.

- The selected Teacher/Educator's transaction history is displayed in the "Transaction History" section.

- A list of transactions that have occurred for the Teacher/Educator are displayed within a grid for the user. The Date of the transaction, Reference, Description of the transaction, office where the transaction occurred, and amount are displayed for the user.

- Current transactions are listed on top.

- The user is able to add a new service to perform for the Teacher/Educator by clicking on the "Add Service" button.

- The user is able to add payment information for a service by clicking on the "Add Payment" button.

- If the user selects to add payment information for the Teacher/Educator he or she is presented with the following information to be entered.

    o The user can select a payment type from the following payment types

- Credit Card

- Check

- Cash

   o The office that the user is located in

- Phoenix

- Tucson

- Flagstaff

   o The amount of the payment

   o The card number if credit card is selected

   o The card holder name if credit card is selected

   o The check number if check is selected

   o The user can clear the payment information entered by clicking the "Clear" button.

   o The user can cancel the operation and return to the transaction history view by clicking on the "Cancel" button.

   o The user can save the payment information by clicking on the "Save" button.

- If the user selects to add a service for the Teacher/Educator he or she is presented with a specified list of services that can be performed as well as the amount of the service.

   o The user is able to select a service from a list of defined services.

   o The user is able to add a service by clicking on the "Add" button.

   o The user can return to the transaction history view by clicking on the "Done" button.

   o The user can clear their selection by clicking on the "Cancel" button.

Security:

- Any authenticated user is able to add payment, and service information for a Teacher/Educator.

Administration

The Administration tab provides an area where the user is able to maintain data such as lookup information, certification, evaluation, and approved area form definitions. The Administration tab also provides a means for the user to view activities that are occurring within the system.

Data Maintenance

Description

The Data Maintenance tab provides all the necessary interfaces to perform modification of all the lookup data within the application.

			Major Name	Enabled	Sort Order	
✕		💾	English	☑	3	
✕			Computer Science	☑	1	
✕			History	☑	2	

Administration

Data Maintenance

Modify/View: Majors

Data Maintenance

System Activity Reports

Certification Editor

Functionality:

- The user is able to select the type of data to modify or view.

- The user is able to modify the information for a particular row by clicking on the edit icon.

- The user is able to cancel their modifications by clicking on the cancel icon. The data is then reloaded.

- The user is able to delete a row by clicking the delete icon.

- The user is able to save the modifications by clicking on the save icon.

Security:

- Any user that is an administrator is able to add, view or modify information.

Appendix A – Application requirements

Requirement	System Area	Used By	Description
1	Person Information/View Summary	Screeners Evaluators	This area provides a summary view of an educator and will be the launching point for drilling into more detailed information
1.1			System will allow user to search for existing applicants and verify if the applicant has existing certifications. All certification information will be available to the screener.
1.2			System will allow the user to enter the date/time the application was received
1.3			System will allow the user to begin a new file on the applicant if one does not exist.
1.3.1			System will uniquely identify applicants by SSN or optionally by a ADE assigned number. In addition the application must assign a unique non SSN identifier for later use in matching educator performance to student achievement(NCLB).
1.3.2			Required Information includes: SSN, Date of Birth, Gender, First, Last, Middle names Address, City State, Zip, Ethnicity, Home Phone
1.3.3			Optional Information Includes: e-mail, National Board Certified(bool), Troops for teachers(bool), Teacher Prep Program(bool). If teacher prep program is yes and the institution issued a institutional recommendation, then the institution that issued the institutional recommendation must be captured for reporting.
1.3.3.1			Teacher Prep Program: If TPP is yes then system will require TPP Location, Institution Name, Institution State and optionally the TPP Country.
1.3.4			If fingerprint and test information has been received electronically, the system will automatically link to and display this information to the user for that applicant based on SSN. If the user has not supplied ADE with their SSN, the system will allow the user to manually link to test scores and fingerprint information by DPS application number or by looking up the test information by SSN and linking to the applicant.
1.3.5			If a degree is required the system will allow the user to add degree information. Additional credential information may be added and stored as well.
1.3.5.1			Required Fields for the degree are Degree Type(Bachelor of Science etc), Major, School and year awarded.

1.3.6			System will store testing information that has been received electronically
1.3.7			Tests will be linked to the applicant by SSN
1.3.8			System will allow users with appropriate permissions to input test information for Arizona and US constitution
1.3.8.1			Required fields for manual tests will include Test Date, Test Description and Results linked to the applicant by SSN. Note: This is expected to be phased out in 2005.
1.3.9			User will be able to flag an application as "file to investigation". The application will not allow a certification to be issued while the investigation flag is set. The status must be apparent from the user from the person page. When in investigations control, the investigation unit will be able to flag the application as "under investigation". These applications will not be subject to a time limit on how long it takes to issue a certificate. The time limit will resume when it is sent back to certification.
1.3.10			Receipts
1.3.10.1			Receipt information must show a list of available services and display a history of previous services and their costs.
1.3.1.2			System will not allow each individual services to be entered into the system and will present a total amount owed to the user. Payment will then be applied to the persons account. (Basic double entry accounting system)
1.4			Applications must be given a time/data stamp that the application was submitted in order to allow the department to process applications on a first in first out basis(FIFO)
1.5			Individual application information must be stored in the system "as submitted" so that it can be reviewed at a later date in its original state.
1.6			User comments must be tracked and logged separately from the system change or activities. Comments may be input as public or private.
1.6.1			From the Person/View summary screen the user may add and view comments and activities from the person screen. Deletion of comments will be controlled by security and limited to authorized persons. The user will be able to filter comments and activities based on comment, comment type or activity type.
1.6.2			System will log all changes to the applicants profile to an activity log specific to that applicant. The activity log must be viewable/accessible from the person screen. The activity log will only be accessible by internal ADE users.

1.7			System will allow the user to flag an application as NSF for non-sufficient funds. If an applicant is flagged NSF, the system will not allow a certification to be issued. The NSF flag may later be removed by a user and a certificate issued upon payment.
1.8			If during the screening process, the screener has determined that there is not enough information to process the application, the screener will have an option to print a letter listing the missing items. Missing items include Unofficial Transcripts, Multiple Renewals(NSF), fingerprint clearance, application incomplete, incorrect form, missing application, degree is not posted on the transcript, certificate has expired, educational credentials are from an un accredited institution, transcripts are foreign., transcripts missing or other. The user will be able to add free form comments to the letter.
1.9			If an application does not qualify for a certificate, the applicant can have one additional evaluation for the same certificate within a 2 year period from the DNQ date.
1.10			Applicants must be tied to a specific office. This will be used to route work to the closest office to an applicant. When receiving on line steps to complete an application, the applicant should be directed to send materials to the nearest physical office. The applicant should be able to select their office on line.
2	Evaluations	Evaluators	This area allow the evaluator to perform an evaluation on the applicant
2.1			Evaluators must be able to retrieve certification applications in the system based on age and process the application in order of submission oldest first.
2.2			Evaluator must be able to view a summary of all certifications requested for an applicant in a summary area.
2.3			All services must have a status associated with the service – Pending, Completed Issued, Completed DNQ(Did not qualify) As a service is completed, the user will flag that service as complete.
2.4			When performing an evaluation service, the evaluation will pre-populate with information that meets evaluation criteria. For example, if a Degree is associated with the applicant, it will fill in the evaluation form with degree information.
2.5			The application will not allow a certificate to be issued unless all requirements are met or marked as met on the evaluation form.
2.6			If the applicant did not qualify, the system will be able to generate a "Did not qualify" letter based on the deficiencies on the evaluation form. The DNQ letter must identify the specific

			criteria the applicant was missing for the certification.
2.7			The evaluator may issue a Certificate to applicants that have met the criteria for a certificate. The evaluator will have the option of printing the certificate or both the certificate and evaluation for issuing to the applicant.
2.8			An evaluation is a "report" that will be printable and may be sent to the applicant. The evaluator must be able to add printable comments or notes to the evaluation.
2.9			The evaluation must be electronically persisted in the system for retrieval at any time by the department.
2.10			Evaluations may be revisited (re-eval) periodically. The re-eval will modify and store the original evaluation. The evaluation must have a status indicator to determine if it is new or a re-eval. This status will be used to determine if a payment is required.
2.11			An evaluator may flag a certificate as superseded by a more current certificate so that the first certificate is not included in reports.
2.12			The system must be able to determine if there was a previous application for a
3	Reports	All	The reports sub-system will allow for various viewable and printable reports for all users
3.1			Operator report –total for all offices, single office or by person the total monies received including information identifying the applicants on that report. See existing operator report. The user will be able to specify a start date/time and end date/time for the report.
3.2			NSF report – displays accounts and amounts with NSF. All regions of the state must be on the report.
3.3			Certificate reports – total number of certificates issued. May be filtered by one or more certificate type, date range, endorsement, approvals(approved areas such as agriculture) and majors
3.4			Services aging report – displays services that are still pending and the age of the pending service.
3.5			Service reports – the following reports will display total numbers based on services. Services applied for, services issued, services denied, services issued in less than or

			greater than specified number of days
3.6			What is fees excused report?
3.7			Services started and services completed reports shows a breakdown by employee of services started and services completed and the total monies brought in by those services. May be filtered by start date, end date and employee.
3.8			Certificates about to expire by district and certificate type. May be filtered by date range.
3.10			Fingerprint difference report, fingerprint application check(applicants that have applied but not been fingerprinted), expired fingerprint report, individuals with current work records and invalid fingerprint cards.
3.11			State Employee exception report
3.12			Ad Hoc reports are listed in Appendix A
3.13			Arizona Revocations Report
3.14			Certificate by age group
3.15			Certificates issued between dates
3.16			Certificates with employer
3.17			Expired certificates
3.18			Lifetime certificates

4.1	Online applications	External Users	Must be able to accept Credit Card payment with application
4.2			Must require all mandatory fields be populated before an application is submitted(SSN, DOB, Gender, Full Legal Name, Mailing address, Telephone)
4.3			User must be able to select one or more services they wish to apply for
4.4			User will be presented with a total amount due during purchase
4.5			Receipt should be issued via E-mail
4.6			System must collect criminal history information per section 5 of application for certification
5.0	Investigations		Following are requirements related to the investigations role
5.1			Investigations should be able to lock the file and prevent any certificates from being issued.
5.2			Investigations will be able to input disciplinary information and be able to prevent the Certification Unit from issuing certifications by marking the applicant as having "no services". This may be removed at a later time by investigations.
5.3			An application should have a status indicating it is under investigation.
5.4			When an application goes into investigation, the investigations group will maintain ownership of the application for as long as required to clear the applicant.
5.5			The application should have two queries regarding fingerprints available to the Investigative Unit. The queries should include: 1) individuals that have applied for a certification service (within an optional time frame) and have failed to apply for a fingerprint clearance card. 2)

			Individuals with current work records and invalid fingerprint clearance cards. There should be an option to disaggregated these queries by school district.
5.6			The application must provide failsafe mechanisms regarding certain individuals. These mechanisms should prohibit any employee from accidentally issuing a certificate to individuals that are currently under investigation or to individuals that have had prior disciplinary action taken against his/her teaching credentials. There should be an "unlocking" mechanism that is available to members of the Investigative Unit so that certificates can still be issued when appropriate.
5.7			The website should incorporate work history information on each certified individual.
5.8			The application should incorporate an investigations comment page similar to the one currently in existence. This should be available only to members of the Investigative Unit. Comments made in the current PowerBuilder application should be migrated over to the new system.
5.9			NASDTEC – The application must be able to incorporate monthly downloads from NASDTEC. These downloads provide updates on teachers that have been revoked/suspended in other states and territories.
5.10			Fingerprints – The application must be able to incorporate nightly downloads from the Department of Public Safety regarding updates on Fingerprint Clearance Cards ("FCC's"). Certified teachers' FCC information should be displayed. All other FCC's should be saved in the "background" (this includes FCC's issued for all education purposes). The data coming from DPS should be treated as the master source of fingerprint data. The system should have the ability to store to applicants fingerprint application number. When the user goes to view fingerprint data, the system should display the fingerprint data based on a SSN match and application number match.
5.11			"Certification Search" Website – The application should be linked to the "certification search" website. The website should pull the following information from the application and

Requirement	System Area	Used By	Description
			make it available to authorized users via the internet: name, social security number, certificates, endorsements, approved areas, record of prior disciplinary action, FCC status, certification comments (not fingerprint or investigation comments).
5.12			The system must be able to report on the applications that have been sent to investigations.
5.13			Investigations must be able to mark a person as ineligible for ANY services. This will prevent the Certification unit from processing any application.

Requirement	System Area	Used By	Description
Business	**General**	**N/A**	System must allow for querying to answer questions on adequacy of personnel, numbers, quality, certification and content knowledge.
			Must allow the department to determine which teachers holding emergency certificates are making progress towards certification. Must be able to identify teachers with emergency certifications who move from district to district on different emergency certifications or even within the same district with different types of emergency certifications and never commit to taking necessary coursework.
			System must address data gaps related to answering questions of an adequate supply of personnel. – These gaps have not been identified and require input from stakeholders. P 3-5 of grant
			System must be developed using standards of cost, intercommunication and ease of use – P6 of grant
			System must provide accurate data to – SEAP, local agencies, teacher prep programs, ADE departments and teachers. - P7 of grant
			Training materials for the system must be developed and tested
			Project must guarantee tasks are completed on a timely basis via monitoring timelines, milestones and time standards – P10 of grant
			Comprehensive public input from all stakeholders will be used to develop requirements for the project. "Applicants and grant recipients funded under this notice must involve individuals with disabilities or parents of individuals with disabilities in planning, implementing and evaluating the project" ED Form 427 GEPA of grant,

			5,6, 8,11 of grant
			Intended functions must be defined and captured tracking completion. P 12 of grant
			Stakeholders must be defined and their needs captured. P12 of grant

Appendix B– Major Module Template

<Major Module> (XXX)

Use this template for each major module of the Application.

Purpose

Describe the purpose of this module. <Copy the description from above and expand if/as necessary>

Features

Describe the features that this module intends to provide to its clients.

The <XXX> Module provides the following features to its clients:
- <Feature 1>

Usage

Describe the intended client usage patterns for this module.

Specialization

Describe the intended rules for specializing this module.

Responsibilities

Describe the intended operational and functional responsibilities of this module.

The <XXX> Module has the following responsibilities:
- <Responsibility 1>

Justification

Document the motivation behind the election of this module. What goals does this module achieve? What problems does this module solve?

Access

Please describe how the module interacts with other Application modules.

Interchange

Please describe how the <XXX> module exchanges data with other Application modules.